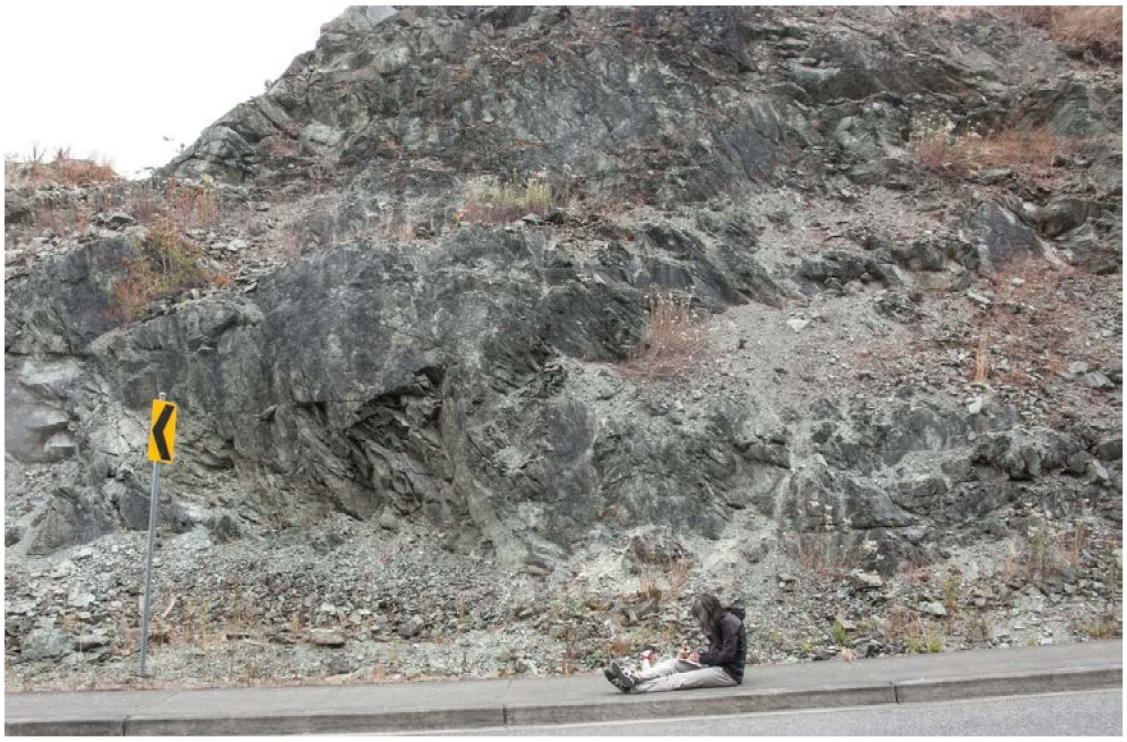
Burlington Hill field trip Lorraine Edmond

Description of this area as cited in Bradley Van Gosen, 2010: "A quarry operated sometime in the 30s on Burlington Hill...Asbestos-Talc Products mines a somewhat fibrous soapstone-actinolite mixture that has developed in shear zones cutting greenstones..."

Sept 26, 2012: field visit to Burlington Hill with Andy Smith and Julie Wroble. Hand samples were collected and photographed later at Manchester Environmental Laboratory (MEL). Sample numbers labeled MEL will be analyzed by Jed Januch at EPA's Manchester laboratory, using *(insert methods)* and samples labled EMSL will be analyzed at *(insert full lab name)* using *(insert methods).*

Our first sampling area:
Starting at the northwest entry to the Burlington Hill development, our first samples are collected from a road cut on Hillcrest Drive, just as the road begins to climb up the hill. We move from downhill to uphill along the road cut and sample three separate sample sites, but they should be considered one location overall.

MEL: (12394051) (most downhill), (12394053) (more uphill)
EMSL: 12090102 (most downhill), 12090104 (middle), 12090105 (most uphill)



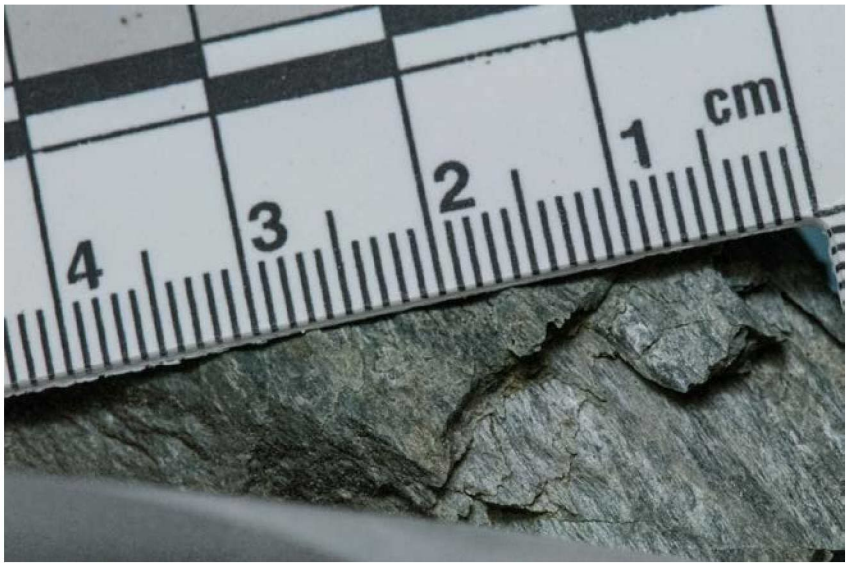
The rock throughout the road cut is a green schist, highly fractured. Some zones are lighter than others and have a talc consistency

The image above is from the downhill sample for MEL **(12394051)**. Some minor quartz veins are apparent in the hand sample, but nothing obviously fibrous. Material is weathered, fine-grained, light green, and has a talc or soapstone consistency.

The texture of the rock is slaty and with no apparent fibers, but there are some small needle-shaped crystals that might meet the definition of fibers.
PLM sample taken at 11:10 AM is **12090102.**

Mid-hill sample from same road cut, second sample for MEL **(12394053)** is slightly up the hill from the previous sample. The rock has a green and very platy texture overall. This sample is also not obviously fibrous, but some fragments are very needle-like. Julie is sampling the finer, more weathered material for PLM here. (11:19 AM **12090104).**

The image below is the platy rock collected as MEL 12394053:

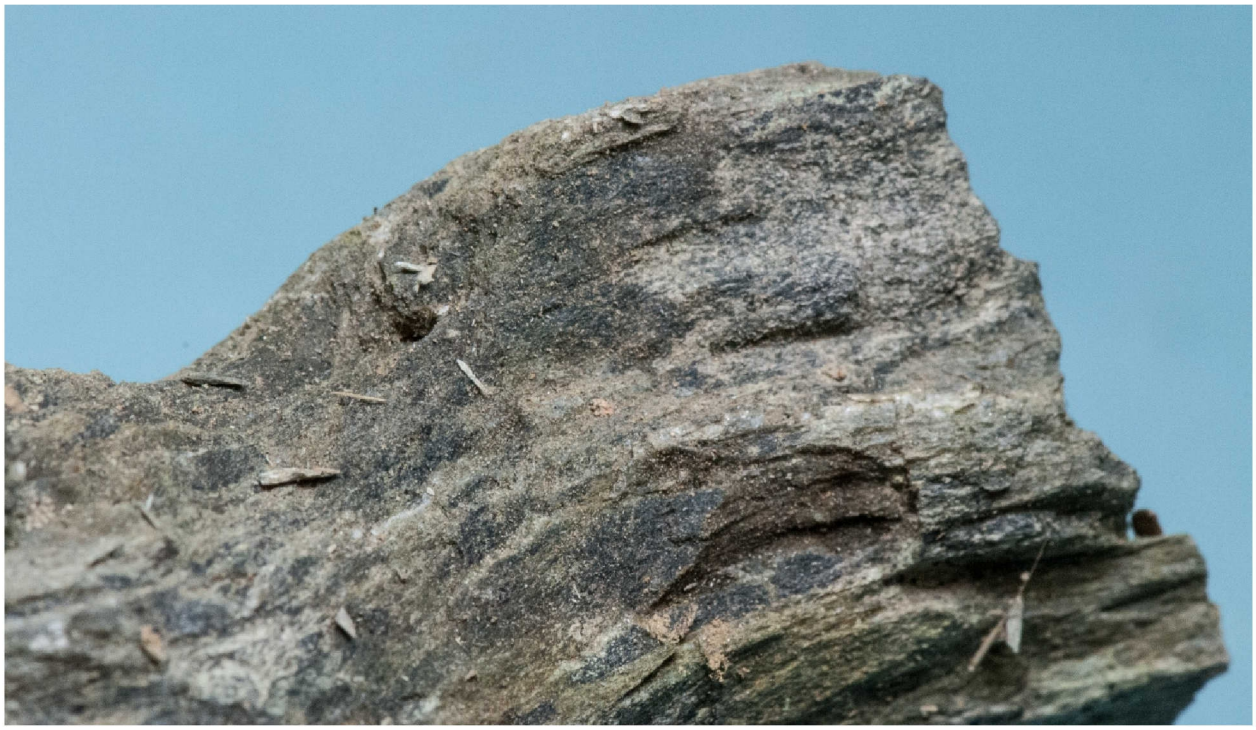


The most uphill sample from the same road cut is for PLM (**12090105**) This is from some more weathered material, pale green, with a shaly texture and fractures that contain what seems to be a fibrous material, with needle-like structure. We are at the uphill edge of the outcrop, just below the cement block retaining wall

Second sampling area

These samples are from a residence on Tinas Coma Drive. The first is from an outcrop to the left of upper garage door (front door of house is to right). Rocks are striated, weathered, and have a sort of "woody" texture from a distance. MEL sample is **(12394056).**

In hand sample, the texture is very platy, contains needle-like crystals that could be fiber bundles.



The PLM sample collected at 11:52 AM (has some organic matter) (**12090107**).

This sample does not show obvious fibers, but has a needle-like texture locally, although most of the rock is platy.

The next location is adjacent to the garage, on the left side of driveway. The light green material is present again here, one surface looks very fibrous.

MEL sample at 11:56 AM is farther along driveway, at garage corner **(12394058)**
A fractured surface shows the fibrous material visible with a hand lens.

PLM sample collected at 12:02 PM is along hillslope outcrop adjacent to the family room window of the residence (**12090109**). This is a darker rock with a slaty texture, some of the thin veinlets on surfaces look fibrous.

Third sampling area

This is reportedly the old quarry site, and contains remnants from some site preparation for planned condos that were never built. The rock along the back wall is dark gray, almost black, has a slaty texture, but is competent enough to hold a nearly vertical slope.

The right end of the wall (north) is our first MEL sample location at 12:26 PM (**12394060**)

There is no obvious veining or fibers or even needles, and not even much of the gray-green altered rock here, although both the north and south ends have a little more weathering or alteration. No evidence of the talc that was supposedly mined here. A few quartz veinlets are present. The hand sample is dark gray, very foliated, with no visible fibers.

PLM sample was collected at 12:33 PM from a more weathered zone at N end of quarry wall (**12090111**)

The south end of the quarry is equally monotonous, PLM sample at 12:43 PM (**12090112**)
Black-gray, shaly rock, sample is fine soil from one of the few weathered zones
Still haven't seen anything resembling talc in the quarry area.

Fourth sampling area
The final location is the roadcut at the neighborhood entry on southeast side of Burlington Hill. Here the rocks look similar to those seen at the quarry/condo location. I do not see the light gray-green color or the talc consistency layers. The rock is more competent here, also has some of the quartz veinlets. At the end of cut (uphill), we found some of the altered greenish rock—with possible needle-like structures along fractures **(12394063)** *–(this sample was not under custody the entire time prior to analysis)* The rock is dark gray and shaley, not visibly fibrous, but the thin green fractured surface could be different. No fibers are visible with hand lens, though. Image below is this sample:

Another sample (**12090114**) was collected from north (uphill) end of the road cut
Final sample was collected at south end of cut-- not seeing anything fibrous in hand sample but collecting last PLM sample here (**12090115**).